

REMARKS

In accordance with the foregoing, the specification has been amended to correct an apparent typographical error, and claims 18 and 19 have been amended.

Claims 1-29 are pending and under consideration. No new matter is presented in this Amendment.

ENTRY OF AMENDMENT UNDER 37 C.F.R. §1.116:

Applicants request entry of this Rule 116 Response because:

- (1) the amendments of claims 18 and 19 should not entail any further search by the Examiner since no new features are being added or no new issues are being raised; and
- (2) the amendments do not significantly alter the scope of the claims and place the application at least into a better form for purposes of appeal. No new features or new issues are being raised.

The Manual of Patent Examining Procedures sets forth in Section 714.12 that "any amendment that would place the case either in condition for allowance or in better form for appeal may be entered." Moreover, Section 714.13 sets forth that "the Proposed Amendment should be given sufficient consideration to determine whether the claims are in condition for allowance and/or whether the issues on appeal are simplified." The Manual of Patent Examining Procedures further articulates that the reason for any non-entry should be explained expressly in the Advisory Action.

REJECTIONS UNDER 35 U.S.C. §112:

On page 2 of the Office Action, the Examiner rejects claim 19 under 35 U.S.C. §112, second paragraph, as being indefinite. This rejection is respectfully traversed and reconsideration is requested.

While it is believed that claim 19 as previously presented was sufficiently clear as to be definite and otherwise compliant with 35 U.S.C. §112, claims 18 and 19 have been amended without narrowing the scope of the claim to be in a form consistent with the Examiner's suggestion. Therefore, it is respectfully requested that the Examiner reconsider and withdraw the rejection.

REJECTIONS UNDER 35 U.S.C. §103:

On pages 3-6 of the Office Action, the Examiner rejects claims 1-5, 7-12, 14-16, 18, 20, 21 and 25-29 under 35 U.S.C. §103(a) in view of Dekker (U.S. Patent 6,600,709) and Ichihara (U.S. Patent 6,396,792). This rejection is respectfully traversed and reconsideration is

requested.

On pages 3-4 of the Office Action, the Examiner admits that Dekker does not disclose a leading one of the pulses having a low level and a power level between an end of the second multi-pulse and a first pulse of the first multipulse being a high level. In order to cure this deficiency, the Examiner relies upon Ichihara as suggesting the ability to utilize a plurality of power levels other than the recording level for the erase power level. Further the Examiner asserts that, since col. 11, lines 16-25 and col. 7, lines 1-5 of Ichihara teach using different erase levels for different materials, one skilled in the art would be motivated to experiment with other pulses, such as those used for recording or is otherwise outside of the erasure pulses, as part of routine experimentation and optimization.

However, it is noted that all invention is based upon optimization and experimentation. Therefore, in order to prevent the trap of impermissible hindsight, there remains a need to provide evidence of a motivation to make a change to the existing art in a manner which meets the claimed invention. With this in mind, in order to rely upon routine experimentation as a rationale, there needs to be evidence of record that one skilled in the art would have recognized that alteration of the power levels of both the first erasure pulse and a pulse between the sequences 13 and 14 would improve erasures or otherwise be known to be beneficial. MPEP 2144.05(II)(B). It is respectfully submitted that the Examiner has not provided such evidence, and that the combination at best suggests altering power levels within the same erasure pattern as opposed to changing the pattern as a whole.

Specifically, to the extent experimentation is suggested, Ichihara teaches experimenting with erasure pulse power levels to promote erasures. As such, col. 11, lines 16-25 and col. 7, lines 1-5 pertains only to alterations of erasure pulse levels. There is no suggestion in Ichihara that the same experimentation should be applied to other pulses not included in the erasures since the problem being solved in Ichihara relates to failure to erase problems shown in FIG. 1E. (Col. 8, lines 7-20 of Ichihara). Indeed, it is noted that Dekker also suggests adjusting bias levels of the erasure pulses to have levels P1 or P2 as a function of speed to reduce jitter. (Paragraph 0009 of Dekker). There is no suggestion that a similar benefit is conferred by adjusting recording pulses, adjusting the power level of pulses between the pulse sequences 13, 14, or by changing the entire erasure pattern. As such, neither Dekker nor Ichihara suggest performing the optimization suggested by the Examiner or that the optimization should be performed by pattern changes as opposed to erasure level changes. Thus, Ichihara does not suggest a high power pulse after the erase pulse in combination with a low power lead pulse,

low power lead and trailing pulses, or high power lead and trailing pulses.

Moreover, Ichihara teaches away from using a low power lead pulse or a high power trailing pulse. Specifically, as is evident from FIGs. 3 and 4 as explained in cols. 8 - 9, the use of the multiple pulses is performed in order to more accurately form erasures and marks. As shown, when initiating an erasure, Ichihara suggests alternating between high and low pulses Pc_1 , Pc_2 in order to promote crystallization growth and nuclei formation. The pulse power levels are due to the different temperatures at which crystals grow and nuclei are generated as shown in FIG. 3. By starting off with a high pulse Pc_1 during the initial period Tc_1 as shown in FIG. 4, nuclei are formed and then grown. Moreover, this pattern is consistent with the desired temperature profile C shown in FIG. 4, which requires the higher temperature at the beginning of the pattern in order to start the erasure pattern and a lower temperature at the end of the pattern in order to ensure that the erasure pattern ends prior to the next mark. As set forth in col. 9, lines 25-31, this pattern as shown in FIG. 1B is used in order "to ensure the effects of the present invention."

As such, assuming arguendo that different levels for Pc_1 and Pc_2 can be used for erasure patterns, Ichihara does not suggest that the first pulse should be at a low power level Pc_2 , thereby delaying the initiation of the erasure pattern which was the problem Ichihara teaches is overcome by the pattern shown in FIG. 1B. Ichihara does not suggest that the last pulse be at a high power level Pc_1 , which would appear to extend the erasure pattern into the adjacent mark. Indeed, the pattern suggested in Ichihara is essentially that suggested in Dekker, which also teaches a high power first erasure pulse of the erasure pulse sequence 14. Thus, neither Ichihara nor Dekker suggest another pattern (regardless of power level) in which the first erasure pulse is anything other than a high power level or where the first erasure pulse has a same level as the pulse between erasure and writing patterns.

The Examiner has further not shown evidence from the prior art there is a suggestion to alter the pattern of both Ichihara and Dekker which would motivate one skilled in the art to revise the pattern of both Ichihara and Dekker in the manner suggested by the Examiner. It is thus respectfully submitted that, even assuming arguendo that Ichihara suggests using other power levels for the shown pulse in FIG. 1B, Ichihara does not suggest altering the overall erasure pattern shown in FIG. 1B such that there remains insufficient evidence as to why one skilled in the art would reverse the power levels or equalize the levels in the pattern shown in FIG. 1B of Ichihara in a manner required to meet the features of the recited invention.

Accordingly, it is respectfully submitted that the combination of Ichihara and Dekker does

not disclose or suggest, among other features, that "a leading one of the second pulses is set to a low level and a power level of a pulse between an end of the second multi-pulse and a first one of the first pulses of the first multi-pulse is set to a high level" as recited in claim 1. Further, it is respectfully submitted that there is insufficient evidence of a motivation to alter the patterns of Ichihara and Dekker in a manner meeting the features of claim 1 as required to maintain a *prima facie* obviousness rejection, and that the Examiner has not accounted for evidence of non-obviousness of record in making the rejection.

For at least similar reasons, it is respectfully submitted that the Examiner reconsider and withdraw the rejections of claims 2-5, 7-12, 14-16, 18, 20, 21 and 25-29.

Lastly, it is noted that the Examiner has not accounted for evidence of record which evidences an improvement in jitter performance and an improved leading edge mark shape where erasure pulses having a first pulse at a low level and a pulse between erasure and recording patterns at a high level. This evidence is included in FIGs. 14A and 19A as explained in the specification of the instant application, and is visibly shown in FIGs. 8A through 10C as discussed in paragraph 0045. The pattern revealed in these results is not suggested in or anticipated by the art of record, which does not suggest adjusting the pulse between erasure and recording patterns. Thus, even assuming arguendo that the Examiner is correct as to the general conditions of the art, where evidence exists of record that a recited change in conditions imparts a novel feature as compared to the general conditions suggested in the existing art, the rejection cannot be maintained. MPEP 2144.05(III). Additionally, in making a rejection based on the obviousness of a claimed feature, the Examiner needs to account for evidence in embodiments and experiments set forth in the specification that show the non-obvious nature of the feature. In Re Glaug, 62 USPQ2d 1151 (Fed. Cir. 2002). Therefore, it is respectfully submitted that, in addition to the above, there is additional evidence of the non-obviousness of the recited combination of claim 1 further supporting the patentability of claim 1 over the combination.

For at least similar reasons, it is respectfully requested that the Examiner reconsider and withdraw the rejections of claims 2-5, 7-12, 14-16, 18, 20, 21 and 25.

In the Office Action at pages 6-8, the Examiner rejects claims 1 and 6 under 35 U.S.C. §103 in view of Ichihara (U.S. Patent No. 6,396,792). This rejection is respectfully traversed and reconsideration is requested.

By way of review, Ichihara discloses a waveform of recording pulses having erasure steps used as erasure signals. However, the first step is a high level $Pc1$ and a last step is a low

level $Pc2$. Moreover, a power between the low level $Pc2$ is the Pa is between $Pc2$ and Pa . (Col. 4, lines 45-62; FIGs. 1B and 1C). There is no suggestion in Ichihara that the erasure steps have other configurations, or that such configurations would be beneficial.

In order to cure this deficiency, the Examiner asserts that one skilled in the art would have been motivated to achieve the recited invention by performing routine experimentation and optimization in view of the need to optimize the erase power level for different types of discs. However, as noted above in relation to the rejection of claim 1 in view of Dekker and Ichihara, there needs to be evidence of record that one skilled in the art would have recognized that alteration of the power levels of both the first erasure pulse and a pulse between the sequences 13 and 14 would improve erasures or otherwise be known to be beneficial. MPEP 2144.05(II)(B). It is respectfully submitted that the Examiner has not provided such evidence, and that the Ichihara at best suggests altering power levels within the same erasure pattern.

Specifically, to the extent experimentation is suggested, Ichihara teaches experimenting with erasure pulse power levels to promote erasures. There is no suggestion in Ichihara that the same experimentation should be applied to other pulses not included in the erasures since the problem being solved in Ichihara relates to failure to erase problems shown in FIG. 1E. (Col. 8, lines 7-20 of Ichihara). There is no suggestion that a similar benefit is conferred by adjusting recording pulses, adjusting the power level of pulses between the pulse sequences 13, 14, or by changing the entire erasure pattern. As such, Ichihara does suggest performing the optimization suggested by the Examiner.

Moreover, Ichihara teaches away from changing the overall pattern, such as by using a low power lead pulse and a high power trailing pulse. Specifically, as is evident from FIGs. 3 and 4 as explained in cols. 8 - 9, the use of the multiple pulses is performed in order to more accurately form erasures and marks. As shown, when initiating an erasure, Ichihara suggests alternating between high and low pulses $Pc1$, $Pc2$ in order to promote crystallization growth and nuclei formation. The pulse power levels are due to the different temperatures at which crystals grow and nuclei are generated as shown in FIG. 3. By starting off with a high pulse $Pc1$ during the initial period $Tc1$ as shown in FIG. 4, nuclei are formed and then grown. Moreover, this pattern is consistent with the desired temperature profile C shown in FIG. 4, which requires the higher temperature at the beginning of the pattern in order to start the erasure pattern and a lower temperature at the end of the pattern in order to ensure that the erasure pattern ends prior to the next mark. As set forth in col. 9, lines 25-31, this pattern as shown in FIG. 1B is used in order "to ensure the effects of the present invention."

As such, assuming arguendo that different levels for Pc_1 and Pc_2 can be used for erasure patterns, Ichihara does not suggest that the first pulse should be at a low power level Pc_2 (thereby delaying the initiation of the erasure pattern) or that the last pulse be at a high power level Pc_1 (thereby extending the erasure pattern into the adjacent mark). It is thus respectfully submitted that, even assuming arguendo that Ichihara suggests using other power levels for the shown pulse in FIG. 1B, Ichihara does not suggest altering the overall erasure pattern shown in FIG. 1B such that there remains insufficient evidence as to why one skilled in the art would reverse the power levels in the pattern shown in FIG. 1B of Ichihara in a manner required to meet the features of the recited invention.

Accordingly, it is respectfully submitted that Ichihara does not disclose or suggest, among other features, that "a leading one of the second pulses is set to a low level and a power level of a pulse between an end of the second multi-pulse and a first one of the first pulses of the first multi-pulse is set to a high level" as recited in claim 1. Further, it is respectfully submitted that there is insufficient evidence of a motivation to alter the patterns of Ichihara in a manner meeting the features of claim 1 as required to maintain a *prima facie* obviousness rejection, and that the Examiner has not accounted for evidence of non-obviousness of record in making the rejection.

Lastly, it is noted that the Examiner has not accounted for evidence of record which evidences an improvement in jitter performance for erasure pulses having a first pulse at a low level and a pulse between erasure and recording patterns at a high level. This evidence is included in FIGs. 14A and 19A as explained in the specification of the instant application. The pattern revealed in these results is not suggested in or anticipated by the art of record. Thus, even assuming arguendo that the Examiner is correct as to the general conditions of the art, where evidence exists of record that a recited change in conditions imparts a novel feature as compared to the general conditions suggested in the existing art, the rejection cannot be maintained. MPEP 2144.05(III). Additionally, in making a rejection based on the obviousness of a claimed feature, the Examiner needs to account for evidence in embodiments and experiments set forth in the specification that show the non-obvious nature of the feature. In Re Glaug, 62 USPQ2d 1151 (Fed. Cir. 2002). Therefore, it is respectfully submitted that, in addition to the above, there is additional evidence of the non-obviousness of the recited combination of claim 1 further supporting the patentability of claim 1 over the combination.

For at least similar reasons, it is respectfully requested that the Examiner reconsider and withdraw the rejections of claim 6.

On pages 8-9 of the Office Action, the Examiner rejects claims 13 and 17 under 35 U.S.C §103(a) in view of Dekker, Ichihara and Ushiyama et al. (U.S. Publication 2002/0176338). This rejection is respectfully traversed and reconsideration is requested.

Even assuming arguendo that the Examiner's construction of Ushiyama et al. is proper, the Examiner does not rely upon Ushiyama et al. as curing the above-noted defect of Dekker and/or Ichihara as applied to claim 1, from which claims 13 and 17 depend. As such, it is respectfully submitted that the combination does not disclose or suggest the features of claims 13 and 17 since the combination does not disclose or suggest the features of claim 1.

On pages 9-10 of the Office Action, the Examiner rejects claims 19 and 22 under 35 U.S.C §103(a) in view of Dekker, Ichihara and Iida et al. (U.S. Publication 2002/0027848). This rejection is respectfully traversed and reconsideration is requested.

Even assuming arguendo that the Examiner's construction of Iida et al. is proper, the Examiner does not rely upon Iida et al. as curing the above-noted defect of Dekker and/or Ichihara as applied to claim 1, from which claims 19 and 22 depend. As such, it is respectfully submitted that the combination does not disclose or suggest the features of claims 19 and 22 since the combination does not disclose or suggest the features of claim 1.

On pages 10-11 of the Office Action, the Examiner rejects claims 23 and 24 under 35 U.S.C §103(a) in view of Dekker, Ichihara and Ando (U.S. Patent 6,088,315). This rejection is respectfully traversed and reconsideration is requested.

Even assuming arguendo that the Examiner's construction of Ando is proper, the Examiner does not rely upon Ando as curing the above-noted defect of Dekker and/or Ichihara as applied to claim 1, from which claims 19 and 22 depend. As such, it is respectfully submitted that the combination does not disclose or suggest the features of claims 19 and 22 since the combination does not disclose or suggest the features of claim 1.

CONCLUSION:

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

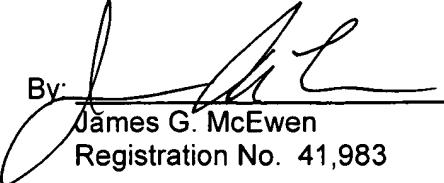
Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 503333.

Respectfully submitted,

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